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ADJUSTING FARM POWER PLANTS TO 1933 CONDITIONS

A radio talk by George R. Boyd, Bureau of Agricultural Engineering, delivered Wednesday, February 8, 1933, and broadcast by a network of 49 associate NBC radio stations.

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Hello, everyone.

In the past 20 years we have come to think of the farm as a factory, producing food and fibre. The power for this factory is provided by man labor, horses and mules, tractors, and engines and motors of various kinds. The modern farmer, being skilled in the traditional ways of men of the soil, and applying the newer results of scientific research, also is an engineer. He must change his power requirements and adapt his machinery to meet different economic situations.

We all know that each farm-factory presents an individual problem of engineering adjustment. The changes which might be profitable on one farm might cause losses on another. So in discussing with you today, briefly, possible adjustments in farm power and farm machinery operations to meet 1933 conditions, you will understand that I must talk in general terms. If any of the general principles which I lay before you seem to apply to your conditions, I know you will consult your county agricultural agent for the detailed information which you must have in order to make adjustments in your own farm-factory. Your county agent has or can get for you the latest information on these problems available in the Department of Agriculture and in the State experiment stations.

Now the general ideas that I shall advance today have come in part from the experience of farmers and in part from field studies by agricultural engineers in cooperation with farmers and specialists in all of the many sciences involved in successful operation of modern farms.

The U. S. Department of Agriculture engineers and scientists in cooperation with engineers and scientists of State agricultural colleges now have under way demonstrations on 72 farms in several States. The operators of the farms are studying with these men the best cropping systems, layout of fields, and so on, for their places, and are fitting their farm equipment to the facts revealed by these studies. A balanced farming program is the keynote of adjusting farm power and machinery to the changing conditions of farm business. Make the machinery fit the farm is the guiding principle.

Remembering that principle, let's now look at the general principles that will guide a man to a profitable decision on how much power he needs to operate his farm, and on how to make most efficient use of that power.

A number of surveys have shown that many farmers have available more power than they are using. Furthermore in many cases, they can cut down their power requirements by planning crop systems such that there will be uniform power requirements throughout the growing and harvesting season. If necessary during the rush season, they can hire extra labor or machinery. The general principle is to own no more machinery and power than can be usefully employed during the greater part of the crop year.

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Under present conditions, of course, most farmers will continue to use the kind or type of power that they have available. Only a few men, in unusual circumstances, will find a change in kind of power justified, at the present time.

Now, as to efficiency in operation of farm power and machinery. For the man oversupplied with machinery or power, efficiency may dictate that he look for custom work that will bring in a return on his investment in such surplus equipment. But of course a man will always see to it that the work on his own farm is done first before he goes out to do custom work.

For the individuals who may be going on farms this season for the first time and may be planning to install equipment, the guiding principle is to decide first on the type of cropping program best suited to the farm, and then fit the equipment to those operations. Under present conditions it certainly seems wise to avoid going into a cropping system that requires several different and complete lines of machinery.

And of course efficient operation of machinery requires that the machines themselves be kept in the best possible condition. This is true at any time. It is more than ever true now when most men are hard put for cash and cannot afford to pay for repairs. Reports from all sections indicate that farmers are spending more time in the implement shed and the farm blacksmith shop this winter than ever before.

Here's a point concerning efficient operation of machinery that is quite important but that is sometimes overlooked. This point is to make field working conditions for the machinery as favorable as possible. If at all possible, remove such obstacles as stumps and boulders. They greatly impair efficient operation. I remember blasting out a pine stump on a Mississippi farm some years ago. We found 15 plow points stuck in that stump and its roots.

Another method of providing favorable operating conditions for machinery is to arrange the fields so that they are large enough for efficient machine operations. In our engineering adjustment studies in Southern Minnesota we have found the average size of fields to be around 13 acres. Many men there, since we started our work, are enlarging their fields. It takes time and costs money to turn even a one-horse plow around at the end of a row, and this loss increases rapidly as the size of the equipment increases. We have reports from men in different parts of the country who have enlarged fields by removing fences, hedgerows, or cultivating over terraces -- all operations that don't require much cash expense.

Also some farmers are finding it profitable to drain wet spots in the most fertile fields, using simple pole drains. They figure that it is more profitable to put these fertile spots to crops and let the less fertile fields go into pasture or some other use.

Well, so much for the general principles agricultural engineers and farmers are working out for adjustment to 1933 conditions in the choice, care, and operations of farm power sources, and machinery. Now just a word about some other engineering angles of the modern farmer's business. Preservation of soil fertility through control of erosion by terraces and good crop rotations

is coming into wider practice, as it should. Men who have, and believe they can keep title to their lands are using labor hired in exchange for farm products, or labor of relatives who are finding shelter on the farm to keep up the farm buildings and do the necessary maintenance and repair work.

To sum up briefly, the story of 1933 farm engineering operations carried on by the men who are most successful at weathering the economic storm is a story of improving the efficiency of power and machinery, using slack time labor for doing those things which ordinarily would call for cash expenditure, and the careful husbanding of all resources.

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